

C L A I M S

1. A light control apparatus comprising:
splitting means for splitting an input signal light to
5 obtain a monitor light which is a part of the input light;
photoelectric conversion means for converting the
obtained monitor light into an electric signal; and
opening and closing degree control means for changing the
opening and closing degree of an optical transmission path for
10 transmitting the input signal light by directly receiving the
electric signal as a drive voltage.
2. The light control apparatus according to claim 1,
wherein said photoelectric conversion means is one or more
semiconductor photovoltaic device.
- 15 3. The light control apparatus according to claim 1,
wherein said photoelectric conversion means is one or more
semiconductor photovoltaic device having a nipi-type
multijunction structure.
4. The light control apparatus according to claim 1,
20 wherein said opening and closing degree control means is an
optical shutter using a micromachine.
5. The light control apparatus according to claim 1,
wherein said opening and closing degree control means is an
optical device such as an absorption-type modulator or
25 refractive index-type modulator.
6. The light control apparatus according to claim 1,
wherein a voltage source is inserted between said
photoelectric conversion means and said opening and closing
degree control means.

7. The light control apparatus according to claim 1,
wherein at least two of said splitting means, means for
converting the monitor light into an electrical signal, and
means for controlling the opening and closing degree of an
5 optical transmission path based on the electrical signal are
disposed on a single planar optical circuit.

8. The light control apparatus according to claim 1,
wherein said opening and closing degree control means
comprises means for holding an opened and closed state
10 controlled based on the electrical signal and means for
indicating the held opened and closed state.

9. A light control apparatus comprising:
splitting and photoelectric conversion means for
splitting an input signal light to obtain a signal light which
15 is a part of the input light and converting the signal light
into an electric signal; and

opening and closing degree control means for changing the
opening and closing degree of an optical transmission path for
transmitting the input signal light by directly receiving the
20 electric signal as a drive voltage.

10. The light control apparatus according to claim 9,
wherein said splitting and photoelectric conversion means is a
semiconductor photovoltaic device having a stack-type
structure.

25 11. The light control apparatus according to claim 9,
wherein said splitting and photoelectric conversion means is a
stack-type semiconductor photovoltaic device having a nipi-
type multijunction structure.

12. The light control apparatus according to claim 9,

wherein said opening and closing degree control means is an optical shutter using a micromachine.

13. The light control apparatus according to claim 9,
wherein said opening and closing degree control means is an
5 optical device such as an absorption-type modulator or
refractive index-type modulator.

14. The light control apparatus according to claim 9,
wherein a voltage source is inserted between said splitting
and photoelectric conversion means and said opening and
10 closing degree control means.

15. The light control apparatus according to claim 9,
wherein said splitting and photoelectric conversion means and
opening and closing degree control means are disposed on a
single planar optical circuit.

16. The light control apparatus according to claim 9,
wherein said opening and closing degree control means
comprises means for holding an opened and closed state
controlled based on the electrical signal and means for
indicating the held opened and closed state.

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